OIPE

DATE: 03/22/2001 RAW SEQUENCE LISTING PATENT APPLICATION: US/09/757,716 TIME: 13:27:54

Input Set : A:\09757716.txt

```
1 <110> APPLICANT: Magna, Holly
           Schaffer, Paul
                                                                          ENTERED
      3
              Lawton, Michael
              Yocum, Sue
              Mitchell, Peter
              Hutchinson, Nancy
      6
              Murry, Lynn E.
W--> 8 <120> TITLE OF INVENTION: HUMAN NUCLEOTIDE PYROPHOSPHOHYDROLASE-2
W--> 9 <130> FILE REFERENCE: PF-0420 US
W--> 10 <140> CURRENT APPLICATION NUMBER: 09/757,716
C--> 11 <141> CURRENT FILING DATE: 2001-01-09
     13 <150> PRIOR APPLICATION NUMBER: US/08/996,083
     14 <151> PRIOR FILING DATE: 1997-12-22
     16 <160> NUMBER OF SEQ ID NOS: 3
     17 <170> SOFTWARE: FastSEQ for Windows Version 3.0
     19 <210> SEQ ID NO: 1
     20 <211> LENGTH: 1156
     21 <212> TYPE: PRT
     22 <213> ORGANISM: Homo sapiens
W--> 23 <220> FEATURE:
     24 <221> NAME/KEY: misc_feature
     25 <223> OTHER INFORMATION: Incyte Clone No.: 1388013
W--> 26 <300> PUBLICATION INFORMATION:
W--> 27 <400> SEQUENCE: 1
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     29
     30
              Leu Ala Gly Ala Arg Asp Ala Thr Pro Thr Glu Glu Pro Met Ala Thr
     31
     32
              Ala Leu Gly Leu Glu Arg Arg Ser Val Tyr Thr Gly Gln Pro Ser Pro
     33
                     35
                                          40
                                                             45
     34
              Ala Leu Glu Asp Trp Glu Glu Ala Ser Glu Trp Thr Ser Trp Phe Asn
     35
                                      55
     36
              Val Asp His Pro Gly Gly Asp Gly Asp Phe Glu Ser Leu Ala Ala Ile
     37
                                 70
     38
              Arg Phe Tyr Tyr Gly Pro Ala Arg Val Cys Pro Arg Pro Leu Ala Leu
     39
                              85
                                                 90
     40
              Glu Ala Arg Thr Thr Asp Trp Ala Leu Pro Ser Ala Val Gly Glu Arg
    41
                         100
                                             105
                                                                 110
              Val His Leu Asn Pro Thr Arg Gly Phe Trp Cys Leu Asn Arg Glu Gln
     42
     43
                                         120
    44
             Pro Arg Gly Arg Arg Cys Ser Asn Tyr His Val Arg Phe Arg Cys Pro
    45
                                     135
                                                         140
    46
              Leu Glu Ala Ser Trp Gly Ala Trp Gly Pro Trp Gly Pro Cys Ser Gly
    47
             145
                                 150
                                                     155
    48
             Ser Cys Gly Pro Gly Arg Arg Leu Arg Arg Arg His Cys Pro Ser Pro
    49
                                                 170
    50
             Ala Gly Asp Ala Cys Pro Gly Arg Pro Leu Glu Ala Gln Lys Cys Val
```

RAW SEQUENCE LISTING

DATE: 03/22/2001 TIME: 13:27:54

PATENT APPLICATION: US/09/757,716

Input Set : A:\09757716.txt

				100					185					190		
51	7 ~~	Dro	A ~~	180	Dro	C1 17	Cuc	Cor		Asp	Thr	Cvs	Glu		Pro	Δsn
52 53	Arg	PIO	195	Cys	FIU	GIY	Cys	200	пец	пэр	TILL	Cys	205	Cys	110	nop
53 54	Hie	Tle		Leu	Glv	Ser	Va 1		Thr	Pro	Ser	Glv		Pro	Leu	Leu
55	1113	210	шеш	шеч	011	501	215	,				220				
56	Glv		Àrσ	Val	Ser	Leu		Asp	Gln	Pro	Gly	Thr	Val	Ala	Thr	Ser
57	225		*** 9	,	501	230					235					240
58		Ala	His	Glv	Thr		Arq	Val	Pro	Gly	Val	Cys	Ala	Asp	Ser	Arg
59					245		_			250		-		-	255	_
60	Ala	Asn	Ile	Arq	Ala	Gln	Met	Asp	Gly	Phe	Ser	Ala	Gly	Glu	Ala	Gln
61				260					265					270		
62	Ala	Gln	Ala	Asn	Gly	Ser	Ile	Ser	Val	Val	Thr	Ile	Ile	Leu	Asp	Lys
63			275					280					285			
64	Leu	Glu	Lys	Pro	Tyr	Leu	Val	Lys	His	Pro	Glu		Arg	Val	Arg	Glu
65		290					295					300				
66	Ala	Gly	Gln	Asn	Val		Phe	Cys	Cys	Lys		Ser	Gly	Thr	Pro	
67	305					310					315	_	_	_	_	320
68	Pro	Lys	Lys	Tyr		Trp	Phe	His	Asn	Gly	Thr	Leu	Leu	Asp		Arg
69			-1	_	325		** ! =	.	a 1	330	N	G1.4	T	7	335	λαν
70	Ala	His	Gly		GLY	Ala	His	Leu		Leu	Arg	GIĀ	Leu	350	PIO	ASP
71	a 1	*1-	G1	340	m	114 ~	0	T	345	штт	N an	C1.1	λla		λl =	1/2 l
72	GIN	Ala	355	rre	TĂT	urs	Cys	160	нта	Trp	ASII	GIU	365	GIY	AIG	Val
73 74	1 22	Cor		mhr	λla	λκα	LOU		17 a 1	Leu	λla	Pro	-	G1n	Pro	Δla
74 75	ALG	370	Gry	TIII	Ата	arg	375	1111	vuı	LCu	niu	380	O _I	0111	110	
76	Cvs		Pro	Δrσ	Pro	Ara		Tvr	Len	Ile	Lvs		Pro	Glu	Asp	Cvs
77	385	1155	110	1119	110	390	OLU	-1-			395					400
78		Gln	Pro	Glv	Ser		Pro	Ala	Tyr	Leu		Val	Gly	Leu	Cys	Pro
79	1	-		_	405	-			-	410	_		_		415	
80	Asp	Thr	Arg	Cys	Pro	Ser	Leu	Ala	Gly	Ser	Ser	Pro	Arg	Cys	Gly	Asp
81	_		-	420					425					430		
82	Ala	Ser	Ser	Arg	Cys	Cys	Ser	Val	Arg	Arg	Leu	Glu	Arg	Arg	Glu	Ile
83			435					440					445			
84	His		Pro	Gly	Tyr	Val		Pro	Val	Lys	Val		Ala	Glu	Cys	Gly
85		450					455					460				
86		Gln	Lys	Cys	Leu		Pro	Arg	Gly	Leu		Arg	Gly	Arg	Val	
87	465		_	_		470	_	_	_	-1	475	3	T1 -	7	T	480
88	Ala	Ala	Asp	Ser		Glu	Pro	Leu	Arg	Phe	Ala	Arg	11e	Leu	495	GTĀ
89	Q1	G1	D	T1.	485	Dho	mhm	71-	m	490	Clu	N an	Dho	Thr		Glu
90 91	GIN	GIU	Pro	500	СТУ	Pile	TILL	нта	505	Gln	СТУ	мар	rne	510	116	GLu
92	Wa 1	Dro	Dro		Thr	C1n	Ara	Τ.Δ.11		Val	Thr	Phe	Va 1		Pro	Ser
93	val	F10	515	Ser	T 11T	3111	n g	520	*41	141	1111		525			
94	G1 v	Glu		Met	Asp	Ala	Va]		Val	Leu	Pro	Phe		Pro	Ara	Gly
95	~ ± 1	530					535	9				540	F		3	- 2
96	Ala		Val	Tyr	His	Glu	Val	Lys	Ala	Met	Arg	Lys	Lys	Ala	Pro	Val
97	545	. 2	_	•		550		-			555	_	_			560
98	Ile	Leu	His	Thr	Ser	Gln	Ser	Asn	Thr	Ile	Pro	Leu	Gly	Glu	Leu	Glu
99					565					570					575	

RAW SEQUENCE LISTING

DATE: 03/22/2001 TIME: 13:27:54

PATENT APPLICATION: US/09/757,716

Input Set : A:\09757716.txt

100	Asp	Glu	Ala		Leu	Gly	Glu	Leu		Leu	Pro	Ser	Gly		Phe	Arg
101				580					585					590		
102	Arg	Ala	Asp	Gly	Lys	Pro	\mathtt{Tyr}		Gly	Pro	Val	Glu		Arg	Val	Thr
103			595					600					605			
104	Phe	Val	Asp	Pro	Arg	Asp	Leu	Thr	Ser	Ala	Ala	Ser	Ala	Pro	Ser	Asp
105		610					615					620				
106	Leu	Arg	Phe	Val	Asp	Ser	Asp	Gly	Glu	Leu	Ala	Pro	Leu	Arg	Thr	Tyr
107	625					630					635					640
108	Gly	Met	Phe	Ser	Val	Asp	Leu	Arg	Ala	Pro	Gly	Ser	Ala	Glu	Gln	Leu
109	_				645					650					655	
110	Gln	Val	Gly	Pro	Val.	Ala	Val	Arg	Val	Ala	Ala	Ser	Gln	Ile	His	Met
111			_	660					665					670		
112	Pro	Gly	His	Val	Glu	Ala	Leu	Lys	Leu	Trp	Ser	Leu	Asn	Pro	Glu	Thr
113		-	675					680		-			685			
114	Glv	Leu	Trp	Glu	Glu	Glu	Ser	Gly	Phe	Arg	Arg	Glu	Gly	Ser	Ser	Gly
115	-	690	•				695	_		-		700				
116	Pro	Arq	Val	Arq	Arq	Glu	Glu	Arq	Val	Phe	Leu	Val	Gly	Asn	Val	Glu
117	705				_	710		-			715		_			720
118	Ile	Ara	Glu	Ara	Arg	Leu	Phe	Asn	Leu	Asp	Val	Pro	Glu	Arg	Arg	Arg
119		5			725					730				-	735	
120	Cvs	Phe	Val	Lvs	Val	Arq	Ala	Tyr	Ala	Asn	Asp	Lys	Phe	Thr	Pro	Ser
121	-1			740		•		•	745		-	-		750		
122	Glu	Gln	Val	Glu	Glv	Val	Val	Val	Thr	Leu	Val	Asn	Leu	Glu	Pro	Ala
123			755		1			760					765			
124	Pro	Glv		Ser	Ala	Asn	Pro	Arq	Ala	Trp	Gly	Arq	Phe	Asp	Ser	Ala
125		770					775			•	•	780		-		
126	Va l		Glv	Pro	Asn	Glv	Ala	Cvs	Leu	Pro	Ala	Phe	Cys	Asp	Ala	Asp
127	785		1			790		- 4			795		•	-		800
128		Pro	Asp	Ala	Tvr	Thr	Ala	Leu	Val	Thr	Ala	Thr	Leu	Gly	Gly	Glu
129	5				805					810				-	815	
130	Glu	Leu	Glu	Pro		Pro	Ser	Leu	Pro	Arq	Pro	Leu	Pro	Ala	Thr	Val
131				820			-		825	•				830		
132	G] v	Val	Thr	Gln	Pro	Tvr	Leu	Asp	Arq	Leu	Gly	Tyr	Arg	Arg	Thr	Asp
133	1		835			- 1		840	,		•	-	845	•		_
134	His	Asp	Asp	Pro	Ala	Phe	Lvs	Arq	Asn	Glv	Phe	Arq	Ile	Asn	Leu	Ala
135		850			••		855					860				
136	Lvs		Ara	Pro	Glv	Asp	Pro	Ala	Glu	Ala	Asn	Glv	Pro	Val	Tyr	Pro
137	865		5		0-1	870					875				-	880
138		Δτα	Sar	ī.en	Δra		Cvs	Gln	Glv	Ala		Val	Thr	Ala	Ser	His
139	110	*** 9	501	204	885	010	0,12	0	U-1	890					895	
140	Pho	Δrα	Phe	Δla		Va1	Glu	Ala	Asp		Tvr	Glu	Tvr	Asn	Val	Val
141	1 110	**** 9	1 110	900	**** 9	,	0		905	-10	-1-		-1-	910	• • •	
142	Dro	Dhe	Δτσ		Glv	Thr	Pro	Δla		Trn	Thr	G1 v	Asp		Leu	Ala
143	110	1 116	915	GIU	OTA	T 11T		920	001		~ 413	1	925			
144	ψ××	Ψт		Δen	Dro	Gln	Glu		Ara	Ala	Cve	Phe		Lvs	Val	Lvs
144	пр	930	FIU	WDII	F 10	GIII	935	E 116	ar 9	пли	~ ₁ 5	940	LCu	<i>,</i> 0	*~+	_, _
145	110		G1 17	Dro	Gln	Glu	-	Met	Va 1	Ara	Ser		Asn	Ala	Gly	Glv
147	945	GIII	GIY	110	GIL	950	- Y -	2200		*** 9	955				1	960
148		Hic	Dro	Ara	Thr		Glv	Gln	T,en	Tur		Len	Ara	Asp	Ala	
740	261	nrs	FIO	ur d	TIIT	ur A	OIY	OTII	a	- Y L	O T Y	4-Cu	*** 9		4	5

RAW SEQUENCE LISTING DATE: 03/22/2001 PATENT APPLICATION: US/09/757,716 TIME: 13:27:54

Input Set : A:\09757716.txt

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970
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     149
                                965
               Ser Val Arg Asp Pro Glu Arg Pro Gly Thr Ser Ala Ala Cys Val Glu
     150
     151
                           980
                                                985
               Phe Lys Cys Ser Gly Met Leu Phe Asp Gln Arg Gln Val Asp Arg Thr
     152
     153
                       995
                                            1000
                                                                 1005
               Leu Val Thr Ile Met Pro Gln Gly Ser Cys Arg Arg Val Ala Val Asn
     154
     155
                   1010
                                        1015
                                                            1020
     156
               Gly Leu Leu Arg Asp Tyr Leu Thr Arg His Pro Pro Pro Val Pro Ala
     157
               1025
                                    1030
                                                        1035
     158
               Glu Asp Pro Ala Ala Phe Ser Met Leu Ala Pro Leu Asp Pro Leu Gly
     159
                                1045
                                                    1050
               His Asn Tyr Gly Val Tyr Thr Val Thr Asp Gln Ser Pro Arg Leu Ala
     160
     161
                           1060
                                                1065
                                                                     1070
     162
               Lys Glu Ile Ala Ile Gly Arg Cys Phe Asp Gly Ser Ser Asp Gly Phe
     163
                                            1080
                                                                 1085
                       1075
               Ser Arg Glu Met Lys Ala Asp Ala Gly Thr Ala Val Thr Phe Gln Cys
     164
     165
                   1090
                                        1095
                                                            1100
               Arg Glu Pro Pro Ala Gly Arg Pro Ser Leu Phe Gln Arg Leu Leu Glu
     166
     167
                                   1110
                                                        1115
               Ser Pro Ala Thr Ala Leu Gly Asp Ile Arg Arg Glu Met Ser Glu Ala
     168
     169
                               1125
                                                    1130
                                                                         1135
     170
               Ala Gln Ala Gln Ala Arg Ala Ser Gly Pro Leu Arg Thr Arg Arg Gly
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                           1140
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     172
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     173
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     176 <211> LENGTH: 4183
     177 <212> TYPE: DNA
     178 <213> ORGANISM: Homo sapiens
  -> 179 <220> FEATURE:
     180 <221> NAME/KEY: misc_feature
     181 <223> OTHER INFORMATION: Incyte Clone No.: 1388013
W--> 182 <300> PUBLICATION INFORMATION:
W--> 183 <400> SEQUENCE: 2
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                                                                                        120
     186
               acceccaccg aggagecaat ggegactgca etgggeetgg aaagaeggte egtgtacace
                                                                                        180
     187
                                                                                        240
               ggccagccct caccagccct ggaggactgg gaagaggcca gcgagtggac gtcctggttc
     188
                                                                                        300
               aacgtggacc accccggagg cgacggcgac ttcgagagcc tggctgccat ccgcttctac
     189
               tacgggccag cgcgcgtgtg cccgcgaccg ctggcgctgg aggcgcgcac cacggactgg
                                                                                        360
     190
               gccctgccgt cogccgtcgg cgagcgcgtg cacttgaacc ccacgcgcgg cttctggtgc
                                                                                        420
     191
               ctcaaccgcg ageaaccgcg tggccgccgc tgctccaact accacgtgcg cttccgctgc
                                                                                        480
     192
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     193
               ccaggccgtc gcttgcgccg ccgccactgc ccaagccccg ctggggatgc gtgtcccggg
                                                                                        600
     194
                                                                                       660
               cgtcctctgg aggcgcagaa gtgcgtgcgg cctcggtgtc cagggtgcag ccttgacacc
     195
               tgtgaatgcc cggaccacat cctcctgggc tcggtggtca ccccatctgg gcaaccactg
                                                                                       720
     196
               ctaggagcca gggtctccct gcgagaccag cctggcactg tggccaccag cgatgctcac
                                                                                       780
     197
               ggaacettee gggtgeetgg tgtetgtget gacageegeg ccaacateag ggeecagatg
                                                                                       840
     198
               gatggettet etgeagggga ggeecaggee caggecaaeg gatecatete tgtggteaee
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```

RAW SEQUENCE LISTING

DATE: 03/22/2001 TIME: 13:27:54

PATENT APPLICATION: US/09/757,716

Input Set : $A:\09757716.txt$

199					accctgagtc		960
200					ggacccccat		1020
201					ctcatgggta		1080
202	ctggagctsc	ggggactgcg	cccagaccag	gctggcatct	accactgcaa	ggcatggaat	1140
203	gaggcgggtg	ccgtgcgctc	gggcactgcc	cggctcactg	tacttgcccc	aggccagcca	1200
204					ctgaggactg		1260
205	ggtagtggcc	ctgcctacct	ggatgtgggc	ctctgtcccg	acacccgctg	ccccagcctg	1320
206					gctgctctgt		1380
207	gagagaaggg	agattcactg	ccctggctac	gtcctcccag	tgaaggtggt	ggcagagtgt	1440
208	ggctgccaga	agtgtctgcc	ccctcggggg	ctggtccggg	gccgtgttgt	ggctgctgac	1500
209	tccggggagc	cgctacgctt	cgccaggatt	ctgctgggcc	aggagcccat	cggcttcacc	1560
210	gcctaccagg	gcgactttac	cattgaggtg	ccgccctcca	cccagcggct	ggtggtgact	1620
211	tttgtggacc	ccagcggtga	gttcatggac	gctgtccggg	tcttgccttt	tgatcctcga	1680
212	ggtgccggcg	tgtaccacga	ggtcaaggcc	atgcggaaga	aagccccggt	cattttacat	1740
213					atgaggcgcc		1800
214	ctggtcctgc	cttctggcgc	tttccgcaga	gccgacggca	aaccctactc	ggggcctgtg	1860
215	gaggcccggg	tgacgttcgt	ggacccccga	gacctcacct	cggcggcgtc	tgcccccagt	1920
216					tgcgcaccta		1980
217	tccgtggacc	teegtgegee	cggctccgcg	gagcagctgc	aggtggggcc	ggtggccgtg	2040
218					aggccctcaa		2100
219					tccggcgcga		2160
220					gcaacgtgga		2220
221					gcttcgtgaa		2280
222	tacgccaacg	acaagttcac	ccccagcgag	caggtggagg	gcgtggtggt	cacgctggtc	2340
223					cctggggccg		2400
224					gcgacgccga		2460
225	gcctacaccg	ccctggtcac	cgccaccctg	ggcggcgagg	agctggagcc	ggccccttcc	2520
226					cctacctgga		2580
227					acggcttccg		2640
228					ctgtgtaccc		2700
229					teegettege		2760
230					gcacacctgc		2820
231	ggcgatctcc	tggcctggtg	gcccaacccg	caggagttcc	gggcctgctt	cctcaaggtg	2880
232			-		acgcaggggg		2940
233	cqcacccqcq	gccageteta	cqqacttcgq	gatgcccgga	gtgtgcgaga	ccccgagcgt	3000
234					ggatgctgtt		3060
235					gctgccggcg		3120
236					cggtgcccgc		3180
237					acaactatgg		3240
238	· -		_		ttggccgctg		3300
239	-				gcacagccgt		3360
240					ggctgctgga		3420
241			-		cgcaggcaca		3480
242					gacctgggca		3540
243					ttgccctcc		3600
244					cctttccaga		3660
245	-				agacaattgt		3720
246	-			-	ggggacgacg		3780
247					cttctcgtgc		3840
41/	gcccgaaggg	accegatace	agocoaguag	org colorga	222223290	5000000000	55.0



VERIFICATION SUMMARY

PATENT APPLICATION: US/09/757,716

DATE: 03/22/2001 TIME: 13:27:55

Input Set : A:\09757716.txt

Output Set: N:\CRF3\03222001\I757716.raw

L:8 M:283 W: Missing Blank Line separator, <120> field identifier
L:9 M:283 W: Missing Blank Line separator, <130> field identifier
L:10 M:283 W: Missing Blank Line separator, <140> field identifier
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:23 M:283 W: Missing Blank Line separator, <220> field identifier
L:26 M:283 W: Missing Blank Line separator, <300> field identifier
L:27 M:283 W: Missing Blank Line separator, <400> field identifier
L:179 M:283 W: Missing Blank Line separator, <220> field identifier
L:182 M:283 W: Missing Blank Line separator, <300> field identifier
L:183 M:283 W: Missing Blank Line separator, <400> field identifier
L:253 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:2
L:253 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:2
L:259 M:283 W: Missing Blank Line separator, <200> field identifier
L:262 M:283 W: Missing Blank Line separator, <300> field identifier
L:263 M:283 W: Missing Blank Line separator, <400> field identifier